FIG. 1

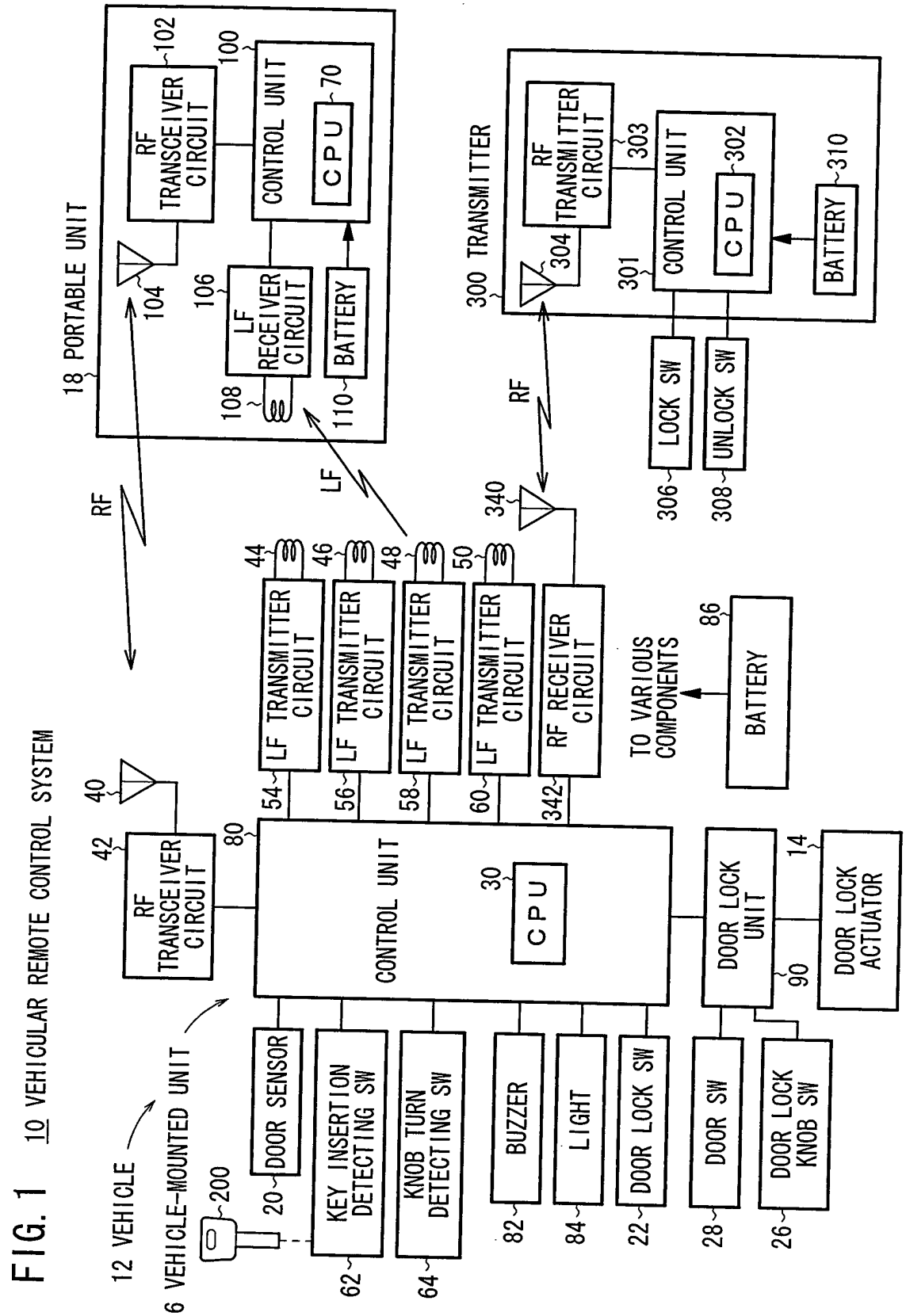

10 VEHICULAR REMOTE CONTROL SYSTEM
12 VEHICLE
16 VEHICLE-MOUNTED UNIT
18 PORTABLE UNIT
RF TRANSCEIVER CIRCUIT
102
CONTROL UNIT
100
CPU
70
104
106
LF RECEIVER CIRCUIT
BATTERY
108
110
RF
LF
300 TRANSMITTER
RF TRANSMITTER CIRCUIT
303
304
301
CONTROL UNIT
CPU
302
BATTERY
310
LOCK SW
306
UNLOCK SW
308
340
44
46
48
50
LF TRANSMITTER CIRCUIT
LF TRANSMITTER CIRCUIT
LF TRANSMITTER CIRCUIT
LF TRANSMITTER CIRCUIT
RF RECEIVER CIRCUIT
54
56
58
60
342
TO VARIOUS COMPONENTS
86
BATTERY
40
42
RF TRANSCEIVER CIRCUIT
80
CONTROL UNIT
30
CPU
DOOR LOCK UNIT
14
90
DOOR LOCK ACTUATOR
200
20
DOOR SENSOR
KEY INSERTION DETECTING SW
62
KNOB TURN DETECTING SW
64
BUZZER
82
LIGHT
84
DOOR LOCK SW
22
DOOR SW
28
DOOR LOCK KNOB SW
26

FIG. 2

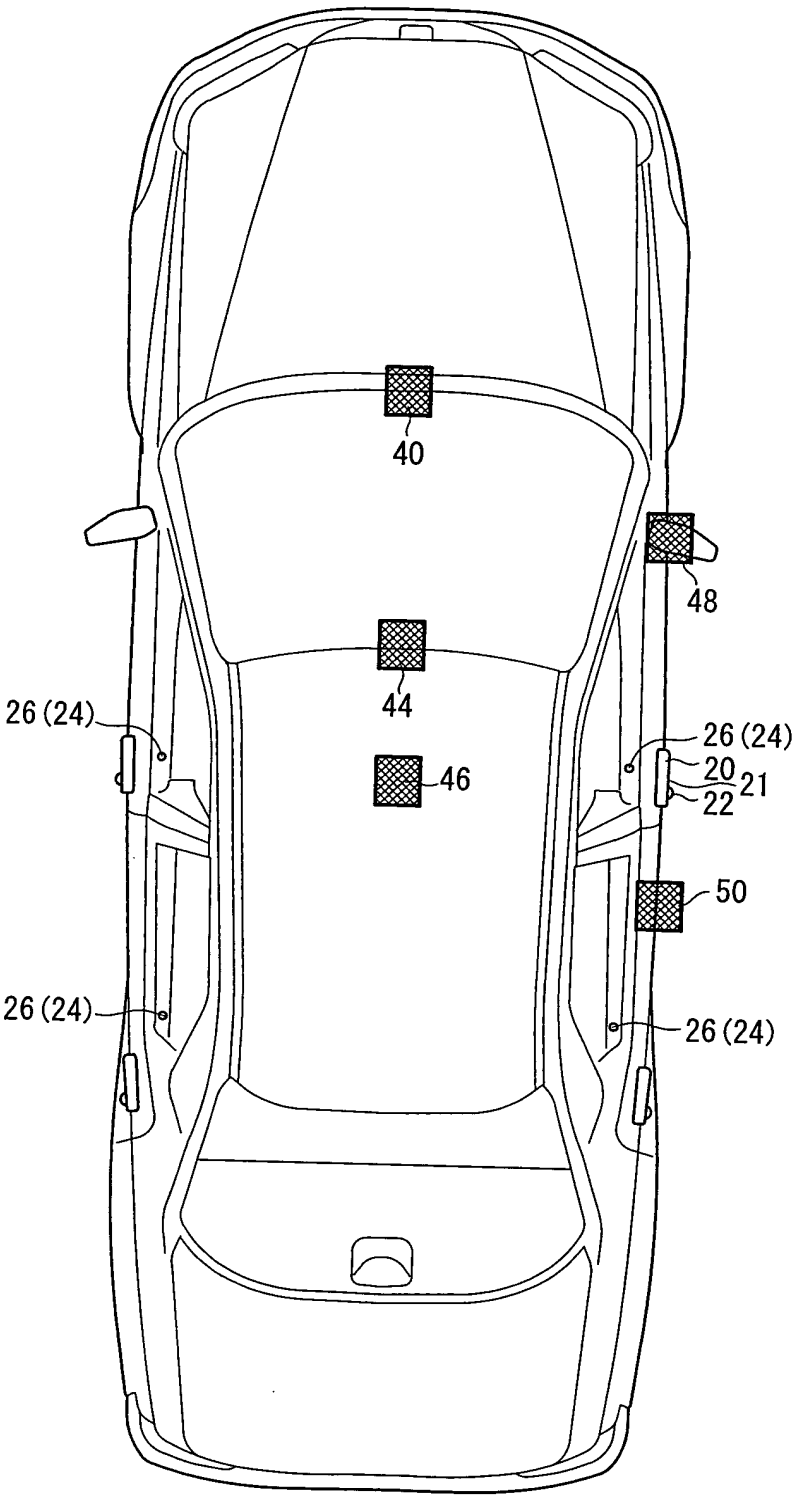


FIG. 3

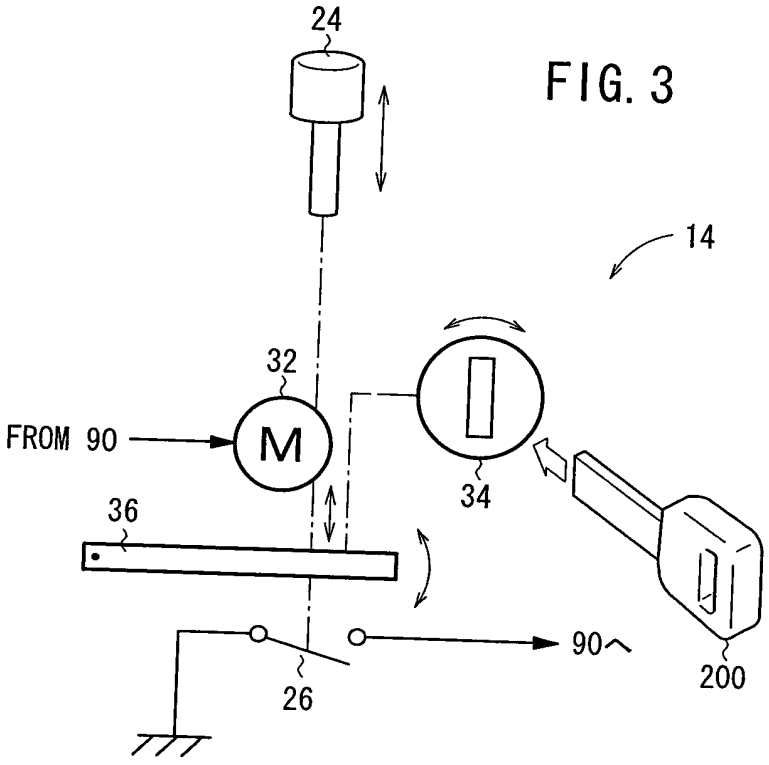


FIG. 4

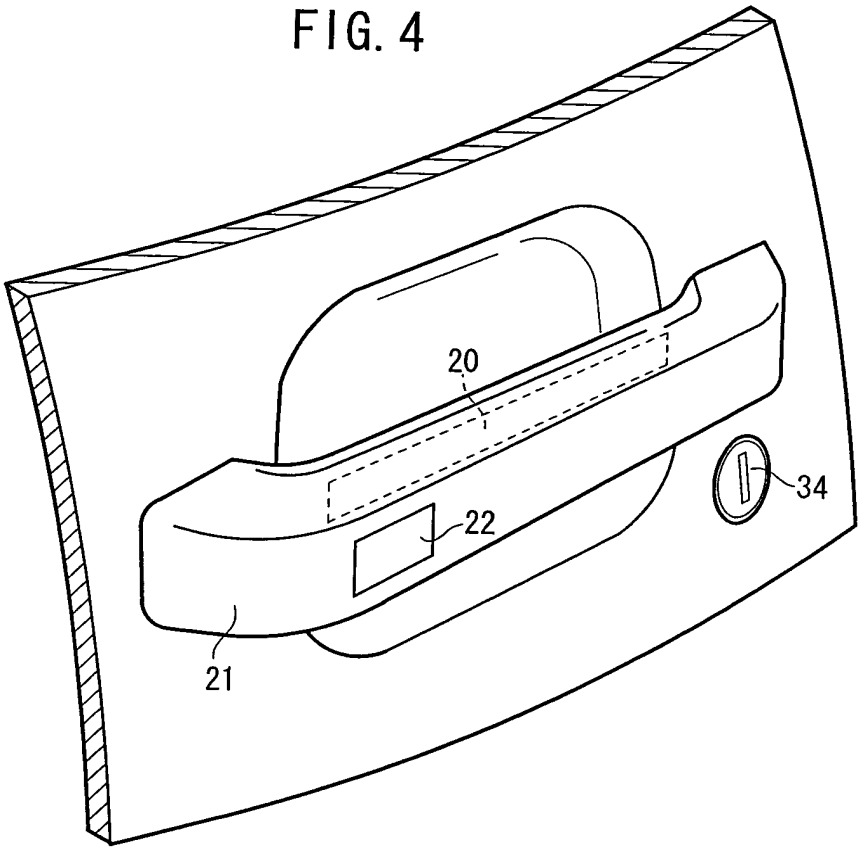


FIG. 5

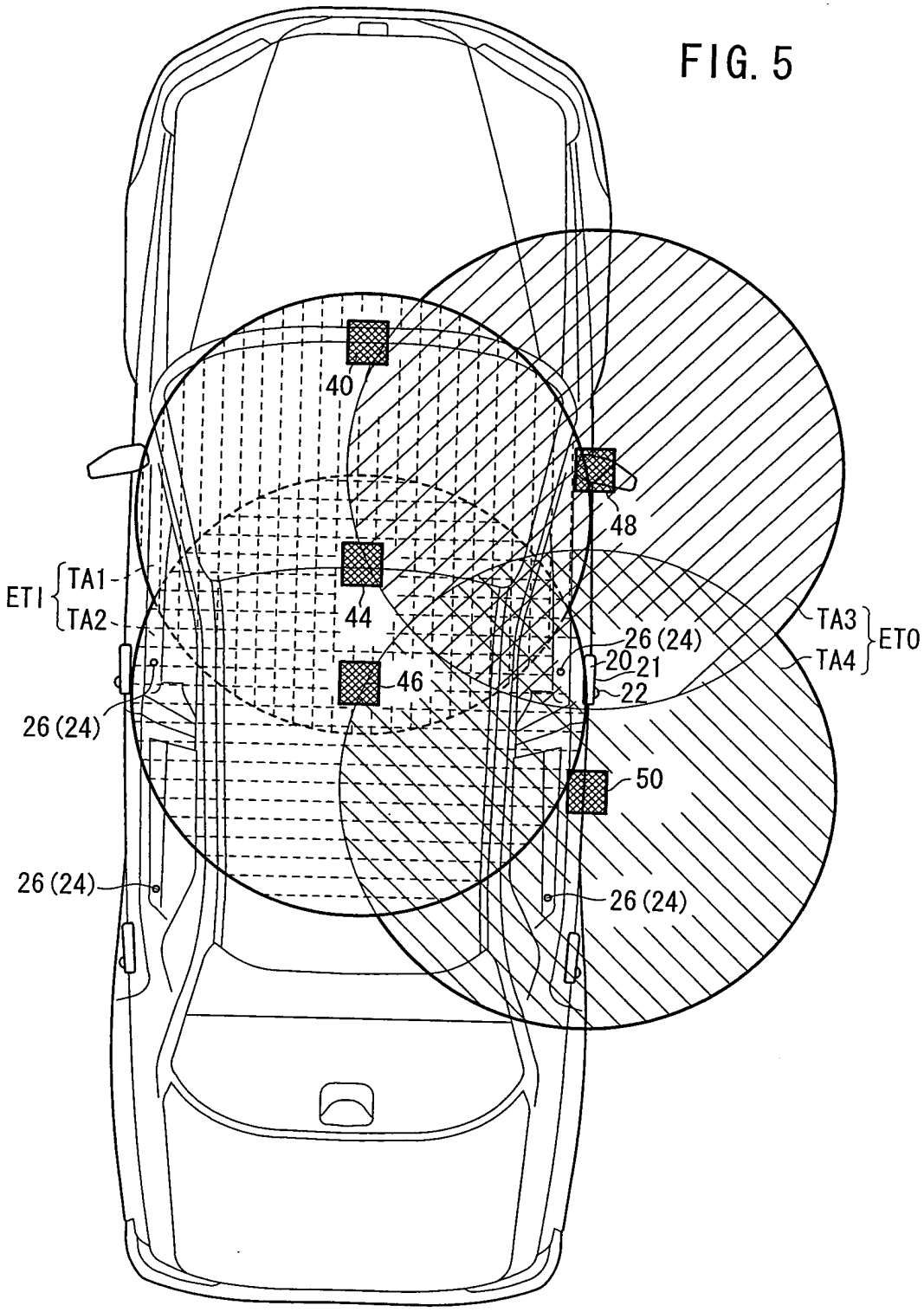


FIG. 6

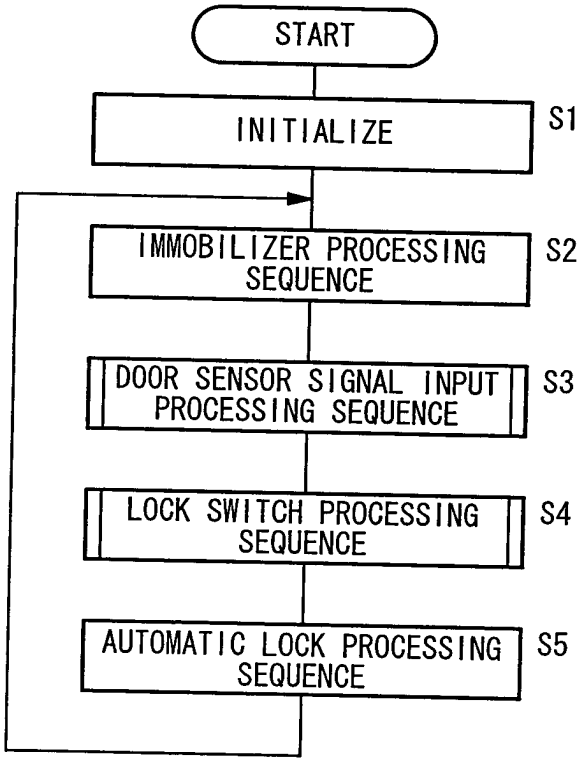

START
INITIALIZE
S1
IMMOBILIZER PROCESSING SEQUENCE
S2
DOOR SENSOR SIGNAL INPUT PROCESSING SEQUENCE
S3
LOCK SWITCH PROCESSING SEQUENCE
S4
AUTOMATIC LOCK PROCESSING SEQUENCE
S5

FIG. 7

S3: DOOR SENSOR SIGNAL INPUT PROCESSING SEQUENCE

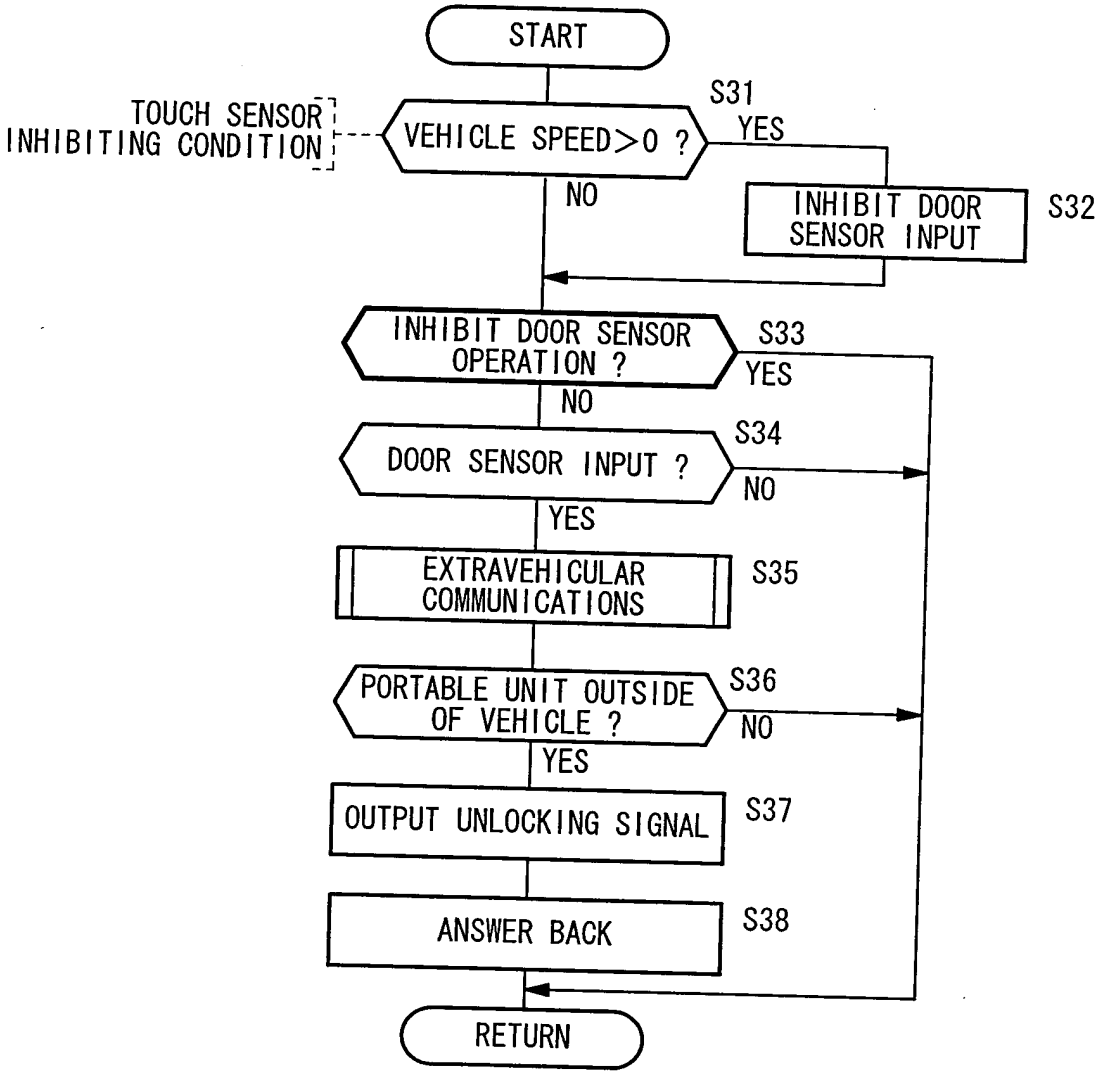


FIG. 8 EXTRAVEHICULAR COMMUNICATION PROCESSING SEQUENCE

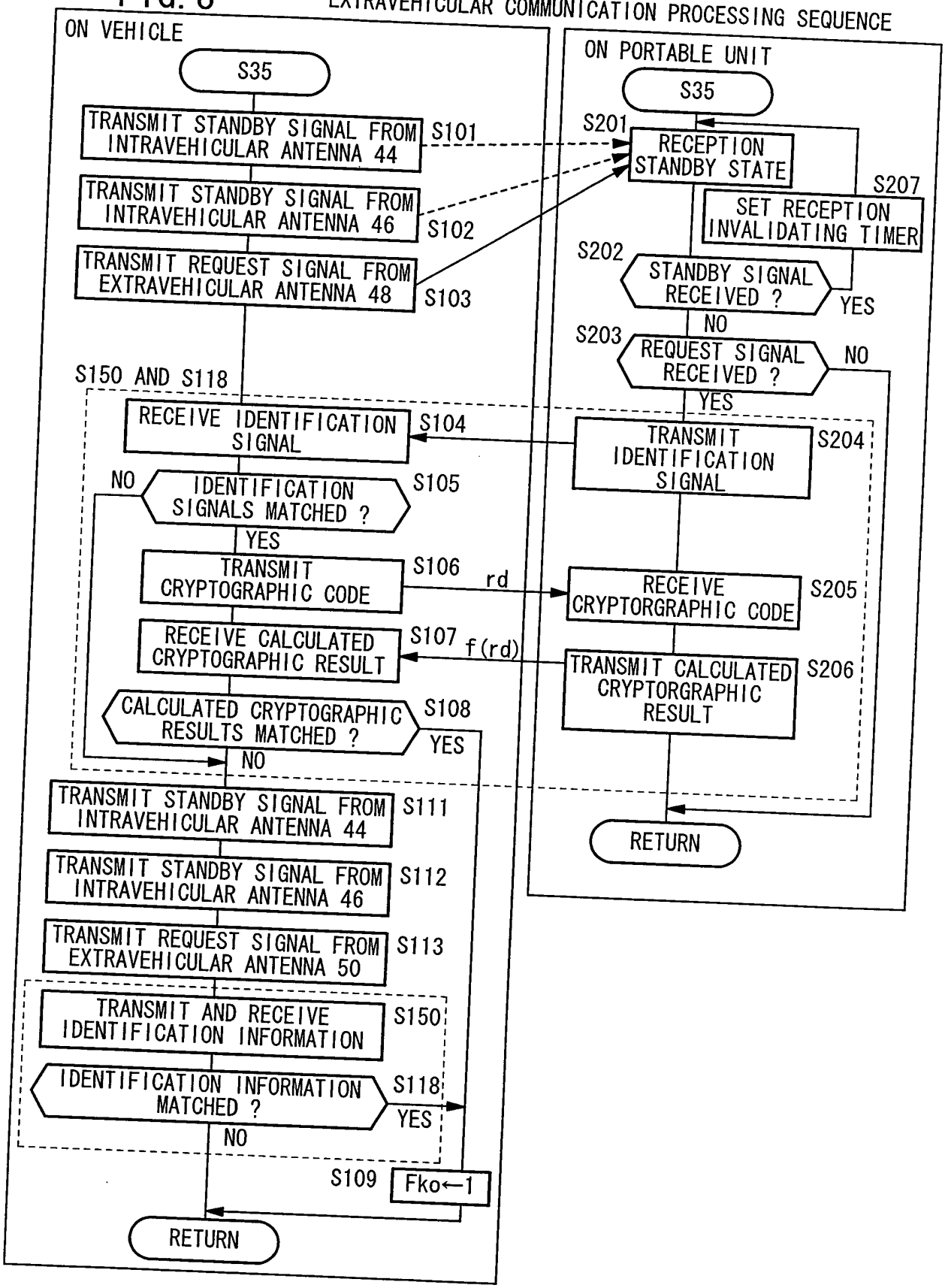


FIG. 9

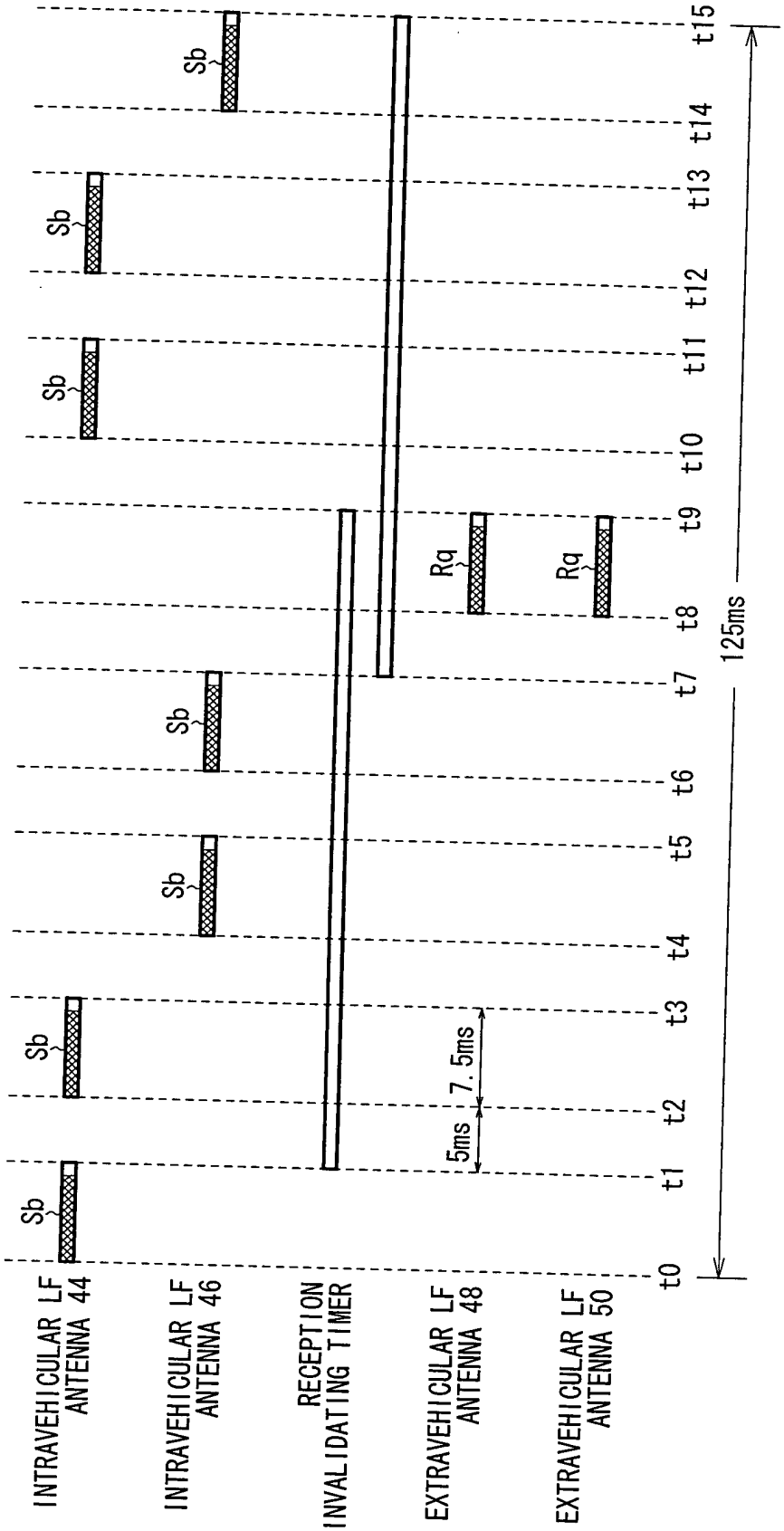

INTRAVEHICULAR LF ANTENNA 44
INTRAVEHICULAR LF ANTENNA 46
RECEPTION INVALIDATING TIMER
EXTRAVEHICULAR LF ANTENNA 48
EXTRAVEHICULAR LF ANTENNA 50
Sb
Rq
5ms
7.5ms
125ms
t0
t1
t2
t3
t4
t5
t6
t7
t8
t9
t10
t11
t12
t13
t14
t15

FIG. 10

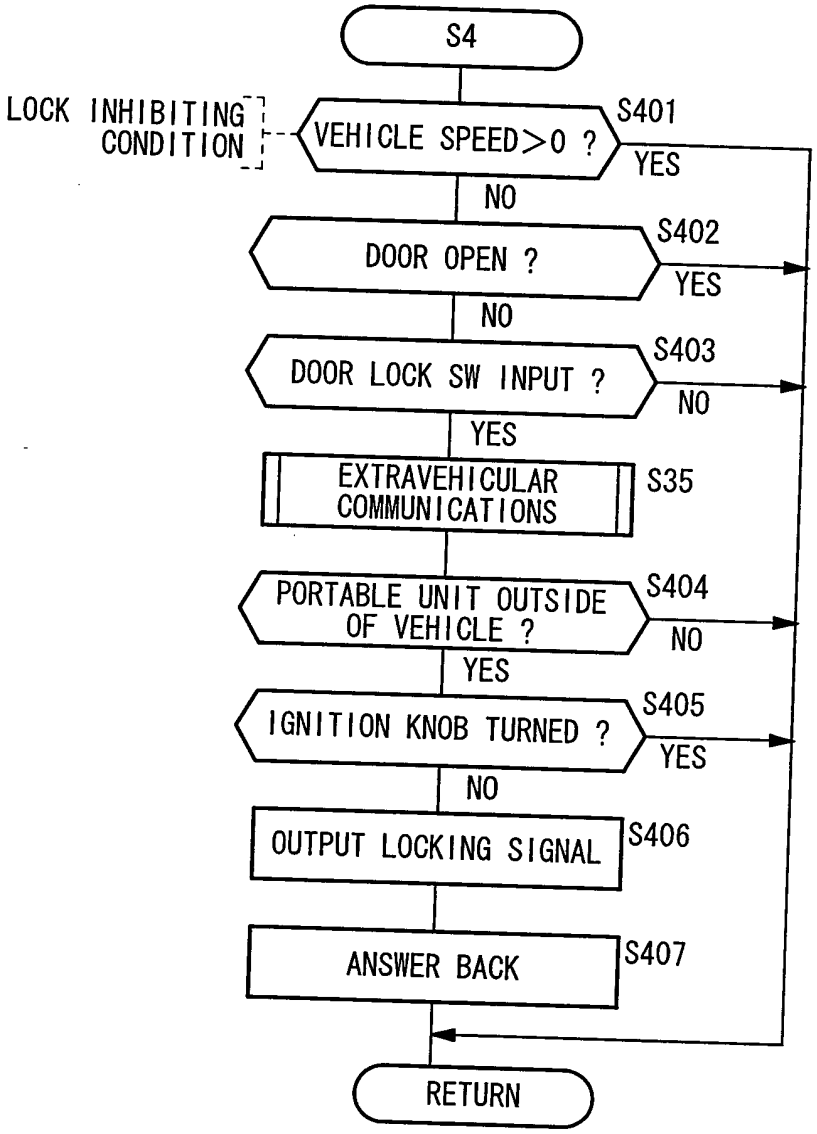
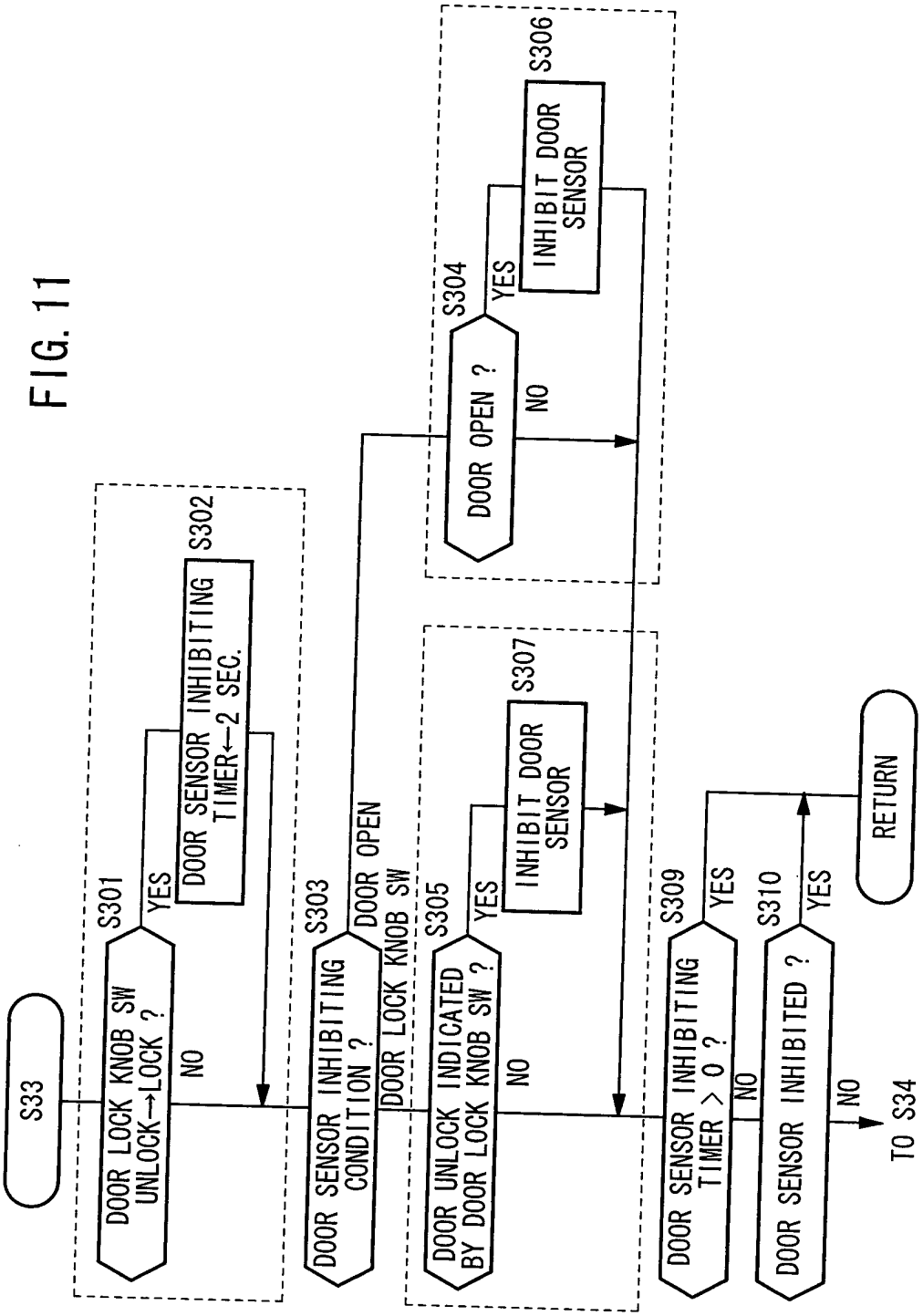

S4
LOCK INHIBITING CONDITION
VEHICLE SPEED>0 ?
S401
YES
NO
DOOR OPEN ?
S402
YES
NO
DOOR LOCK SW INPUT ?
S403
NO
YES
EXTRAVEHICULAR COMMUNICATIONS
S35
PORTABLE UNIT OUTSIDE OF VEHICLE ?
S404
NO
YES
IGNITION KNOB TURNED ?
S405
YES
NO
OUTPUT LOCKING SIGNAL
S406
ANSWER BACK
S407
RETURN

FIG. 11


S33
S301
DOOR LOCK KNOB SW UNLOCK→LOCK ?
YES
NO
S302
DOOR SENSOR INHIBITING TIMER←2 SEC.
S303
DOOR SENSOR INHIBITING CONDITION ?
DOOR OPEN
DOOR LOCK KNOB SW
S304
DOOR OPEN ?
YES
NO
S306
INHIBIT DOOR SENSOR
S305
DOOR UNLOCK INDICATED BY DOOR LOCK KNOB SW ?
YES
NO
S307
INHIBIT DOOR SENSOR
S309
DOOR SENSOR INHIBITING TIMER > 0 ?
YES
NO
S310
DOOR SENSOR INHIBITED ?
YES
NO
RETURN
TO S34